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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/796,752	03/09/2004	Xinghua Li	CRNG.053	2524

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EXAMINER	
ELVE, MARIA ALEXANDRA	
ART UNIT	**PAPER NUMBER**
1725	

DATE MAILED: 10/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/796,752	LI ET AL.	
	Examiner	Art Unit	
	M. Alexandra Elve	1725	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 July 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-10 and 21* is/are pending in the application.

4a) Of the above claim(s) *21* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-10* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *09 March 2004* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *3/9/04, 11/18/04*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

Applicant's election without traverse of group I in the reply filed on 7/24/06 is acknowledged.

There was an oversight on the claims and there are two claim 14's. Using rule 126, the claims have been renumbered and there are now 21 claims in total. In order to move prosecution forward the examiner will examine claims 1-10 as elected by applicant (7/24/06) and will withdraw claim 21.

Claim Rejections - 35 USC § 112

Claim 10 recites the limitation "OLED" in the claim. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-10 are rejected under 35 U.S.C. 102(b) as being anticipated by Fukuzawa et al. (USPN 6,136,622).

Fukuzawa et al. discloses an organic EL device in which a sealing cap covers the layers. Laser light outside the cap is used to affix the sealing glass cap on the device. Lasers may be YAG or excimer. The laser light has a wavelength of less than 250 nm. The sealing glass cap is preferably transparent to light of a wavelength of less than 250 nm and preferably made of quartz or synthesized quartz. The laser light is irradiated from the outside of the sealed glass cap to fuse the device. The laser is low temperature machining whereby, the heat diffusion distance is low (20-30 nm) due to the high photon energy of the excimer laser and the high peak output intensity of the laser light based on short pulsive laser emission (i.e. high power and short duration).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-10 are rejected under 35 U.S.C. 103(a) as being obvious over Li et al. (USPAP 2003/0066311 A1) in view of Fukuzawa et al.

The applied reference has a common inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a)

might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). This rejection might also be overcome by showing that the reference is disqualified under 35 U.S.C. 103(c) as prior art in a rejection under 35 U.S.C. 103(a). See MPEP § 706.02(l)(1) and § 706.02(l)(2).

Li et al. discloses a (OLED) luminescent body formed on a glass substrate with a bonded glass cap. The sealing layer is formed on the rim of the glass substrate. A high-powered laser is used to penetrate the glass cap and focus on the sealing layer so as to sinter the frit.

Li et al. does not teach the use of an ultrafast laser.

Fukuzawa et al. discloses an organic EL device in which a sealing cap covers the layers. Laser light outside the cap is used to affix the sealing glass cap on the device. Lasers may be YAG or excimer. The laser light has a wavelength of less than 250 nm. The sealing glass cap is preferably transparent to light of a wavelength of less than 250 nm and preferably made of quartz or synthesized quartz. The laser light is irradiated from the outside of the sealed

glass cap to fuse the device. The laser is low temperature machining whereby, the heat diffusion distance is low (20-30 nm) due to the high photon energy of the excimer laser and the high peak output intensity of the laser light based on short pulsive laser emission (i.e. high power and short duration).

It would have been obvious to one of ordinary skill in the art at the time of the invention to use a fast laser as taught by Fukuzawa et al. in the Li et al. system because this minimizes structural changes through out the device.

Claims 1-10 are rejected under 35 U.S.C. 103(a) as being obvious over Morena et al. (USPAP 2004/0206953 A1) in view of Fukuzawa et al.

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). This rejection might also be

overcome by showing that the reference is disqualified under 35 U.S.C. 103(c) as prior art in a rejection under 35 U.S.C. 103(a). See MPEP § 706.02(l)(1) and § 706.02(l)(2).

Morena et al. discloses the manufacture of a hermetically sealed glass package i.e. an OLED. The second substrate contains a dopant. The laser is used to heat the doped second substrate plate in manner that causes a portion of it to swell and form a hermetic seal that connects the first substrate with the second substrate.

Morena et al. does not teach the use of a high-powered laser or an ultrafast laser.

Fukuzawa et al. discloses an organic EL device in which a sealing cap covers the layers. Laser light outside the cap is used to affix the sealing glass cap on the device. Lasers may be YAG or excimer. The laser light has a wavelength of less than 250 nm. The sealing glass cap is preferably transparent to light of a wavelength of less than 250 nm and preferably made of quartz or synthesized quartz. The laser light is irradiated from the outside of the sealed glass cap to fuse the device. The laser is low temperature machining whereby, the heat diffusion distance is low (20-30 nm) due to the high photon energy of the excimer laser and the high peak output intensity of the laser light based on short pulsive laser emission (i.e. high power and short duration).

It would have been obvious to one of ordinary skill in the art at the time of the invention to use a fast laser & powerful laser as taught by Fukuzawa et al. in

the Morena et al. system because this minimizes structural changes through out the device.

Claims 1-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Auch et al. (USPN 6,803,245) in view of Fukuzawa et al.

Auch et al. discloses the encapsulation of an electronic device i.e. an OLED. A thin cover lid holder is attached to a substrate without damage. The substrate is comprised of a transparent substrate for example glass. The lid layer is glass. Adhesives, inductance techniques or laser welding may be used to mount the lid on to the substrate. The glass support is transparent to UV.

Auch et al. does not teach the use of a high-powered laser or an ultrafast laser.

Fukuzawa et al. discloses an organic EL device in which a sealing cap covers the layers. Laser light outside the cap is used to affix the sealing glass cap on the device. Lasers may be YAG or excimer. The laser light has a wavelength of less than 250 nm. The sealing glass cap is preferably transparent to light of a wavelength of less than 250 nm and preferably made of quartz or synthesized quartz. The laser light is irradiated from the outside of the sealed glass cap to fuse the device. The laser is low temperature machining whereby, the heat diffusion distance is low (20-30 nm) due to the high photon energy of the excimer laser and the high peak output intensity of the laser light based on short pulsive laser emission (i.e. high power and short duration).

It would have been obvious to one of ordinary skill in the art at the time of the invention to use a fast laser & powerful laser as taught by Fukuzawa et al. in the Auch et al. system because this minimizes structural changes through out the device.

Claims 1-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Liu et al. (USPN 6,608,283) in view of Fukuzawa et al.

Liu et al. discloses the solder sealing of an OLED. The sealing band is used in conjunction with a focused laser in order to seal the OLED within the cover assembly. The substrate and cover are transparent; generally glass. The laser beam is preferably a solid-state laser having a wavelength longer than the wavelength determined by the band gap of the silicon substrate. The gap allows the light to directly hit the solder pre-form.

Liu et al. does not teach the use of a high-powered laser or an ultrafast laser.

Fukuzawa et al. discloses an organic EL device in which a sealing cap covers the layers. Laser light outside the cap is used to affix the sealing glass cap on the device. Lasers may be YAG or excimer. The laser light has a wavelength of less than 250 nm. The sealing glass cap is preferably transparent to light of a wavelength of less than 250 nm and preferably made of quartz or synthesized quartz. The laser light is irradiated from the outside of the sealed glass cap to fuse the device. The laser is low temperature machining whereby, the heat diffusion distance is low (20-30 nm) due to the high photon energy of the

excimer laser and the high peak output intensity of the laser light based on short pulsive laser emission (i.e. high power and short duration).

It would have been obvious to one of ordinary skill in the art at the time of the invention to use a fast laser & powerful laser as taught by Fukuzawa et al. in the Liu et al. system because this minimizes structural changes through out the device.

Claims 1-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Langer et al. (USPN 6,936,963) in view of Fukuzawa et al.

Langer et al. discloses a process for encapsulating an OLED. A light source is used to solder the glass substrates together. The solder is heated using a laser. The advance of the laser is that the heat is in a confined area. YAG or diode lasers are used. Wavelengths lie in the IR region so that the radiation is applied directly to the solder.

Langer et al. does not specifically teach the use of a high-powered laser or an ultrafast laser.

Fukuzawa et al. discloses an organic EL device in which a sealing cap covers the layers. Laser light outside the cap is used to affix the sealing glass cap on the device. Lasers may be YAG or excimer. The laser light has a wavelength of less than 250 nm. The sealing glass cap is preferably transparent to light of a wavelength of less than 250 nm and preferably made of quartz or synthesized quartz. The laser light is irradiated from the outside of the sealed glass cap to fuse the device. The laser is low temperature machining whereby,

the heat diffusion distance is low (20-30 nm) due to the high photon energy of the excimer laser and the high peak output intensity of the laser light based on short pulsive laser emission (i.e. high power and short duration).

It would have been obvious to one of ordinary skill in the art at the time of the invention to use a fast laser & powerful laser as taught by Fukuzawa et al. in the Langer et al. system because this minimizes structural changes through out the device.

Claims 1-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fleming et al. (USPN 6,111,357) in view of Fukuzawa et al.

Fleming et al. discloses an OLED with a radiation-cured seal. The protective cover materials are glass or quartz. The resin or filler is cured using a laser. Lasers include argon gas and excimer.

Fleming et al. does not specifically teach the use of a high-powered laser or an ultrafast laser.

Fukuzawa et al. discloses an organic EL device in which a sealing cap covers the layers. Laser light outside the cap is used to affix the sealing glass cap on the device. Lasers may be YAG or excimer. The laser light has a wavelength of less than 250 nm. The sealing glass cap is preferably transparent to light of a wavelength of less than 250 nm and preferably made of quartz or synthesized quartz. The laser light is irradiated from the outside of the sealed glass cap to fuse the device. The laser is low temperature machining whereby, the heat diffusion distance is low (20-30 nm) due to the high photon energy of the

excimer laser and the high peak output intensity of the laser light based on short pulsive laser emission (i.e. high power and short duration).

It would have been obvious to one of ordinary skill in the art at the time of the invention to use a fast laser & powerful laser as taught by Fukuzawa et al. in the Fleming et al. system because this minimizes structural changes through out the device.

Claims 1-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Guenther (USPN 6,952,078) in view of Fukuzawa et al.

Guenther discloses an encapsulated OLED. A cap is mounted on to the substrate using spacers. The substrate and cap materials include glass and so forth. Spacer particles are made of glass. The cap is mounted using low temperature solder, ultrasonic bonding, welding techniques including inductance or laser welding.

Guenther does not teach the use of a high-powered laser or an ultrafast laser.

Fukuzawa et al. discloses an organic EL device in which a sealing cap covers the layers. Laser light outside the cap is used to affix the sealing glass cap on the device. Lasers may be YAG or excimer. The laser light has a wavelength of less than 250 nm. The sealing glass cap is preferably transparent to light of a wavelength of less than 250 nm and preferably made of quartz or synthesized quartz. The laser light is irradiated from the outside of the sealed glass cap to fuse the device. The laser is low temperature machining whereby,

the heat diffusion distance is low (20-30 nm) due to the high photon energy of the excimer laser and the high peak output intensity of the laser light based on short pulsive laser emission (i.e. high power and short duration).

It would have been obvious to one of ordinary skill in the art at the time of the invention to use a fast laser & powerful laser as taught by Fukuzawa et al. in the Guenther system because this minimizes structural changes through out the device.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. See US PTO-892.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to M. Alexandra Elve whose telephone number is 571-272-1173. The examiner can normally be reached on 6:30-3:00 Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick J. Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

September 30, 2006.

M. Alexandra Elve
Primary Examiner 1725